

Pine Creek Bridge
Spanning the Yellowstone River
on a county road 10 miles
south of Livingston
Livingston Vicinity
Park County
Montana

HAER No. MT-61

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
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HISTORIC AMERICAN ENGINEERING RECORD

PINE CREEK BRIDGE

I. INTRODUCTION

Location: The Pine Creek Bridge is located approximately on the section line between Sections 2 and 11, Township 4 South, Range 9 East. The bridge carries a county road over the Yellowstone River about 10 miles south of Livingston, Montana, and about one mile east of the small community of Pine Creek.

Quad: Brisbin

UTM: Zone 12, E - 532750, N - 5039600

Date of Construction: 1910

Present Owner: Park County, Montana
Park County Courthouse
Livingston, Montana

Present Use: Vehicular bridge for a gravel county road

Significance: The Pine Creek Bridge is significant for its associations with the early 20th century settlement boom in Montana. The Pine Creek Bridge is one of the older bridges on the Yellowstone River and an exceptional example of a pin-connected, Parker through truss. The bridge is also significant for its association with the Montana Bridge and Iron Company of Livingston, a short-lived, but active, Montana bridge-building company.

Historian: Lon Johnson, Renewable Technologies, Inc., Butte, Montana, October 1989

II. HISTORY

Census statistics for Montana reveal the rush for land that ran its course from 1900 to 1918. The population of the state stood at 243,329 in 1900, rose to 376,053 in 1910, and stood at 548,889 in 1920. The number of farms in the state for the same period increased from 13,370 to 57,677. Two years of drought and the beginning of the great exodus made Montana's 1920 census smaller than it would have been in 1918.¹ A number of circumstances coincided with extensive promotional campaigns by the railroads to create this unprecedented rush for land. Passage of the Enlarged Homestead Act of 1909 increased from 160 to 320 the number of acres homesteaders could claim. The development of new farm implements made it easier to operate the larger farms. Dry land farming techniques were developed and actively promoted in areas previously thought to require irrigation. Greater than average annual precipitation fell for much of the first two decades of the century. The prices for farm products climbed steadily.²

A. HISTORY OF THE PINE CREEK AREA

In 1876, Yellowstone National Park became the first area so designated in the nation and quickly became a tourist attraction. To stimulate the potential tourism market, the Northern Pacific Railroad built a branch line from Livingston south along the Yellowstone River through Paradise Valley toward the Park to Cinnabar in 1883. At the turn of the century the line was extended to Gardiner on the Park's northern boundary. Many early settlers in

the area established businesses to serve tourists, but the railroad line also served to stimulate agricultural settlement. The earliest bridge in the area of the Pine Creek was the Carter Bridge six miles downstream (north). A log toll bridge owned and operated by Tom Carter, it was one of the earliest crossings of the Yellowstone in the county. As settlement in the Paradise Valley increased, a small community grew at Pine Creek along the east side of the river, and eventually they wanted a more convenient and direct access to the Northern Pacific tracks on the west side.³

B. CONSTRUCTION OF THE PINE CREEK BRIDGE

On March 3, 1909, a delegation of citizens from the small community of Pine Creek, approximately 10 miles south of Livingston and on the east side of the Yellowstone River, appeared before the Park County commissioners requesting the construction of a wooden bridge to connect the roads on either side of the river. The commissioners directed the county surveyor to run lines for a connecting road with the location of the bridge to be determined at a later date.⁴ In November, the Montana Bridge and Iron Company of Livingston submitted the low bid of \$9,998 for construction of a 220-foot steel span near the mouth of Pine Creek.⁵ The Pine Creek Bridge is the longest extant bridge built by the company.⁶

C. THE MONTANA BRIDGE AND IRON COMPANY AND THE MINNEAPOLIS STEEL AND MACHINERY COMPANY

The Montana Bridge and Iron Company is a rather obscure Montana bridge-building enterprise, having been in existence only two or three years. Nevertheless, Montana Bridge and Iron ranks as the third most prolific Montana-based bridge-building company -- following the Security Bridge Company of Billings and O.E. Peppard of Missoula -- prior to the establishment of the Bridge Department of the State Highway Commission.

Through to 1915, bridge builders were generally responsible for submitting plans and specifications with their bids. Following that date, the Bridge Department provided standardized plans and specifications for the counties to use when soliciting bids.⁷ Many of the bridge builders in Montana did not develop their own plans and specifications, but rather used those of a structural steel fabricator with which they were associated. Such appears to have been the case with the Montana Bridge and Iron Company. In the early years of the 20th century, through 1908, the Minneapolis Steel and Machinery Company was awarded most of the contracts for steel bridges in Park County. Although for the period 1909-1911, contracts were awarded to the Montana Bridge and Iron Company, this likely marks a change only in the corporate entity erecting bridges in Park County, but not the entity fabricating steel for the bridges. The structural details of the bridges of the two companies were the same, the shape of the bridge plaques used by the two companies were

identical, and Arthur H. Allen, President of the Montana Bridge and Iron Company, had previously been a manager and travelling agent for Minneapolis Steel and Machinery.⁸

Minneapolis Steel and Machinery Company was started by Lewis and George Gillette, major capitalists in Minneapolis. They were major figures in the Gillette-Herzog Manufacturing Company of Minneapolis, a 19th century structural steel fabricator which built some of the oldest surviving bridges in Montana as well as the first steel headframes used for copper mining in Butte. In 1900, J.P. Morgan merged Gillette-Herzog and 23 other large steel bridge fabricating companies into the giant American Bridge Company. Two years later, the Gillettes acquired an interest in Twin Cities Iron Works and used it as a base founding the Minneapolis Steel and Machinery. Their new company built numerous bridges in Minnesota and the northern tier of states. The Montana Historic Bridge Inventory identified fourteen bridges built by Minneapolis Steel and Machinery, and the firm continued to be a major supplier of structural steel for Montana construction projects well into the second half of the 20th century.⁹

The Montana Bridge and Iron Company filed articles of incorporation with the State of Montana in 1909, listing A.H. Allen, Jacob F. Sohl, and Carl Christianson as stockholders. Nothing is known of Christianson. Sohl had bid on small bridge projects earlier in the century and in 1904 he was paid to prepare plans and specifications for a bridge by the Park County Commissioners.¹⁰ In 1906 he was superintendent of the Land Department for the

Yellowstone Land & Irrigation Co, and in 1912, after the Montana Bridge and Iron Company ceased to exist, he was the president of the Rocky Mountain Bridge Company. The Company is not known to have built any bridges.¹¹

In addition to the Pine Creek Bridge, Montana Bridge and Iron built several pony trusses over the Shields River, a bridge similar to the Pine Creek Bridge at Carter (no longer standing), and at least one bridge in Madison County, (also no longer extant). In 1911, the International Bridge and Iron Company was incorporated in Minnesota with Allen and Sohl as stockholders. This company built at least one bridge over the Shields River for Park County. Then during the next several years, Park County bridges were again being built by Minneapolis Steel and Machinery.¹²

III. DESCRIPTION OF THE PINE CREEK BRIDGE

The Pine Creek Bridge has a 220-foot, pin-connected Parker through truss main span supported by tubular piers, 3-feet in diameter, filled with concrete and joined, with a pair of channel sections with batten plates. There are 10-foot wood stringer approach spans at either end supported on concrete abutments. Roadway width is 15 feet 3 inches and out-to-out width of the superstructure is 16 feet. The total vertical height of the bridge is 32 feet.

The trusses of the Parker main span consist of ten panels each. The inclined end posts and upper chords are boxed sections comprised of two channel sections with a riveted top cover plate and lacing bars along the lower flanges. The lower chords consist of paired, punched eye-bars measuring 3 inches by $\frac{3}{4}$ inches. Hip verticals are two pair of angles sections, 3 inches by 2 inches, riveted with $\frac{1}{4}$ -inch batten plates. The other vertical members are boxed sections consisting of two 6-inch channel sections riveted with lacing bars. Diagonal members consist of paired bars, $2\frac{1}{2}$ inches by $\frac{3}{4}$ inches; the counters are $\frac{3}{5}$ -inch round rods with turnbuckles. The I-beam floor beams are riveted to the vertical members above the lower chords. The 15-inch I-beam floor beams support wood stringers, which in turn support deck planks. The portal bracing is comprised of paired angle sections in an "A" configuration with wings. Sway bracing is comprised as follows: struts consisting of two pairs of angle sections riveted with lacing bars are connected to the top chord; two channel sections riveted with batten plates are connected to the vertical members; and round rod cross-braces with turnbuckles stiffen the assembly. Bottom lateral bracing is provided by $1\frac{1}{8}$ inch square rods. Top lateral bracing is provided by round rods. Railings on the bridge are wood. An overhead marker's plate on the portal bracing bears the following information: "1910, Built by Montana Bridge & Iron Co., A.H. Allen President, Livingston, Montana" and lists the county commissioners.

IV. FUTURE OF THE BRIDGE

The Pine Creek Bridge is owned by Park County, Montana. The Montana Department of Highways and Park County are planning to re-align the gravel road which connects the two sides of the Yellowstone River. These plans call for the replacement of the Pine Creek Bridge. In accordance with Section 106 of the National Historic Preservation Act of 1966, the Federal Highway Administration and the Montana Department of Highways have executed a Memorandum of Agreement with the Montana Historical Society and the Advisory Council on Historic Preservation under which this Historic American Engineering Record documentation is taking place. The bridge was also offered for relocation with no response.

V. ENDNOTES

1. Michael P. Malone and Richard B. Roeder, Montana: A History of Two Centuries (Seattle: University of Washington Press, 1978), 148.
2. Fredric L. Quivik, Historic Bridges in Montana (Washington, D.C.: National Park Service, 1982), 30-31; Mary Wilma M. Hargreaves, Dry Farming in the Northern Great Plains: 1900-1925 (Cambridge: Harvard University Press, 1957), 16-17.
3. Billings (Montana) Gazette, 7 January 1932, Sunday supplement, 1.
4. Livingston (Montana) Enterprise, 13 March 1909, p. 7.
5. Park County "Proceedings of the County Commissioners," Park County Courthouse, Livingston, Montana, Book 3, 15 November 1909, p. 89.
6. Quivik, Historic Bridges in Montana, 69.
7. Ibid, 40, 43, 69.

8. The Park County "Commissioners Record," for the early years of the 20th century into 1908, show Minneapolis Steel and Machinery getting contracts for smaller bridges, like the riveted Warren pony trusses across the Shields River, as well as larger bridges, like the 234-foot, pin-connected Pennsylvania through truss Springdale Bridge (HAER inventory cards on file at the Montana State Historic Preservation Office, Montana Historical Society, Helena). For Allen's earlier affiliation, see R.L. Polk's Minneapolis City Directory, 1909 and 1910, listings under Arthur H. Allen.
9. Fred Quivik, "Montana's Minneapolis Bridge Builders," IA: The Journal of the Society for Industrial Archeology 10 (1984): 41-46.
10. Park County "Proceedings of the County Commissioners," Book 2, 27 January 1904, 449.
11. R.L. Polk and Company's Livingston City Directory, (Helena: R.L. Polk & Co., 1906-07 and 1912-1913).
12. For the Shields River bridges and the later bridges built by Minneapolis Steel and Machinery, see the HAER Inventory Cards for Park County; for other Montana Bridge and Iron Company bridges, see Park County "Commissioners Record," 4 March 1909, and Madison County "Commissioners Record," Madison County Courthouse, Virginia City, 20 July 1910; International Bridge and Iron's articles of incorporation are filed in Incorporation Records, Book T-3, p. 759, Secretary of State's Office, St. Paul, MN.

VI. BIBLIOGRAPHY

A. BOOKS

Malone, Michael P. and Richard B. Roeder. Montana: A History of Two Centuries. Seattle: University of Washington Press, 1978.

Minneapolis City Directory. Minneapolis: R.L. Polk and Company, 1909 and 1910.

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R.L. Polk and Company's Livingston City Directory. Helena: R.L. Polk & Co., 1906-1907 and 1912-1913.

B. NEWSPAPERS

Billings (Montana) Gazette, 7 January 1932, Sunday supplement.

Livingston (Montana) Enterprise, 13 March 1909.

C. ARTICLES AND PAPERS

Quivik, Fredric L. "Montana's Minneapolis Bridge Builders." IA: The Journal of the Society for Industrial Archeology 10 (1984): 41-46.

D. GOVERNMENT DOCUMENTS

"Articles of Incorporation, Indianapolis Bridge and Iron Company." Filed in Incorporation Records, Book T-3, 759. Secretary of State's Office, St. Paul, Minnesota.

Historic American Engineering Record Inventory Cards for Park and Madison Counties. On file at the State Historic Preservation Office, Montana Historical Society, Helena, Montana.

Madison County "Commissioners Record." Madison County Courthouse, Virginia City, Montana. 20 July 1910.

Park County "Proceedings of the County Commissioners." Park County Courthouse, Livingston, Montana. 27 January 1904; 4 March, 15 November 1909.